

This guide will take you through how to freeze pests safely and effectively to protect your collections.

Equipment Checklist	
Acid-free tissue paper	
Polythene sheeting or ziplock bags	
Parcel tape	
Labels	
A pen (and one that writes on plastic, if possible)	
A freezer	

1. Checking the object

Is it safe to freeze?

Dry Materials

- Most dry organic materials such as wood, basketry, textiles, leather and some stuffed animals can be frozen.
- Check with a conservator if you have anything with real teeth, ivory, glass or metal.

Wet Materials

- Do not freeze wet items without further advice from a conservator.

Does it need to be frozen?

If the infestation is active

- If you can see live pests, fresh insect droppings (frass) or clean, new looking holes or if you suspect it may be active, then it may be best to freeze the item.

If the infestation looks very old

- If there are no signs of pest bodies or cast skins, old, dirty-looking exit holes:
 - Keep the object isolated with some pest traps nearby.
 - Watch to see if there is any change, rather than subject it to the freezing process.

Documentation

- Check the object's number and identity and write a label to go inside the polythene where it can be clearly seen.

Top tips:

- Do not freeze wet items without advice from a conservator
- Double check the type of freezer you have (domestic or commercial) before starting the process

2. Wrapping the object

If the object is in a box

- Check if it needs some crumpled acid-free tissue to support it inside the box.
- Wrap the box in polythene sheeting or put in a ziplock bag.
- Place the label inside, so that it can be read through the polythene.

If the object is not in a box

- Place a large piece of polythene sheet on your work surface and then lay acid-free tissue on it.
- Place the object in the middle of the tissue and cover with more tissue.
- Carefully wrap the polythene sheet around the object, excluding as much air as possible without squashing the object, or place in a ziplock bag.
- Place the label inside, so that it can be read through the polythene.

For all objects

- Tape all the edges of the polythene closed with the parcel tape, so that the package is airtight.
- This protects the object from freezer burn (moisture transferring from the frozen object) or condensation (moisture from the air condensing on the cold object when it is brought out from the freezer).
- If you have a pen that writes on plastic, write PEST on the outside of the polythene

3. Freezing the object

Place the item in the freezer

- Think about how you will remove it afterwards – it will be very brittle and fragile while cold.
- If it is a textile or paper item, it could easily be damaged if the bundle is lifted out unsupported, so it would be better to place it on a tray or rigid support.
- Try to allow airflow around and underneath the object to enable faster freezing.
- You could put chocks underneath it to raise it off the bottom.

Leave it until you are sure the centre of the object is thoroughly frozen

- This might be 24 hours for a dress, or 2 days for a big book, or 4 days for a box of books.
- Leave it for at least another 48 hours after that, a minimum of 3 days.

Carefully take the item out of the freezer

- Remember it will be very brittle while cold, so do not expect it to support its own weight (if it is flexible) or put it down heavily on a hard surface.
- For very fragile items it may be better to leave it in the freezer, turn the freezer off and leave the lid slightly open.



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Items in a commercial freezer

- If it is a commercial freezer it should go down to at least -26°C .
- If it is a commercial freezer you can now leave it to thaw out for at least as long as it took to get fully frozen, plus another 24 hours.
- Cross out the word PEST if you wrote it on the outside of the polythene so you know it has been treated.

Items in a domestic freezer

- If it is a domestic freezer it probably only goes down to -19 or -20°C
- If it is a domestic freezer, allow it to thaw out for at least as long as it took to get fully frozen, plus another 24 hours. Do not open the polythene.
- Keep it sealed, but put one line through the word PEST (if you wrote it on the outside of the polythene) so you know it is partly treated.
- After you are sure it has had 24 hours at room temperature throughout, put it back in the freezer for a second freeze, for as long as the first freeze.
- The idea is that the adults and larvae will be killed by the first freeze, but unless the temperature goes down to about -26°C the eggs will survive.
- The thaw fools them into thinking winter is over and spring has come, so the eggs start to mature into larvae.
- At this stage the second freeze is enough to kill them.
- After the second freeze, allow the item to thaw out unopened.
- Put a second line through the word PEST (if you wrote it on the outside) so you know it has had its second treatment.
- Alternatively you can leave the items in a domestic freezer for 2 weeks. This can also kill the adults, larvae and eggs.

4. Unpacking

- Once the item is completely thawed, take it to a clean, pest-free area before you open it.
- Clean the area where the object was stored to remove any eggs and possible pests.
- Open the package and gently brush off any evidence of dead pests, droppings, cases etc.
- Make a record of what was done and anything you found and removed.
- Make sure the object's record includes details of the treatment.
- Keep checking pest traps and watch out for possible re-infestation.
- Sometimes some pests can be very resistant and a second freezing treatment may be needed.